

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Original) A method of manufacturing a semiconductor device, comprising:
 - forming a film containing metal elements and silicon elements on a semiconductor substrate;
 - exposing the semiconductor substrate to an atmosphere containing an oxidant to form a silicon dioxide film at the interface between the semiconductor substrate and the film containing metal elements and silicon elements; and
 - nitriding the film containing metal elements and silicon elements after forming the silicon dioxide film.
2. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein the metal elements includes at least one of Zr, Hf, Al and La.
3. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein the film containing metal elements and silicon elements is formed by using CVD.
4. (Currently Amended) A method of manufacturing a semiconductor device, according to claim 1, wherein the film containing metal elements and silicon elements contains oxygen or nitride nitrogen.

5. (Currently Amended) A method of manufacturing a semiconductor device, according to claim 1, wherein the film containing metal elements and silicon elements contains oxygen and ~~nitride~~ nitrogen.

6. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein the film containing metal elements and silicon elements is formed by using an alkoxide or an amide compound as a precursor.

7. (Original) A method of manufacturing a semiconductor device, according to claim 6, wherein the alkoxide is at least one of tetra ethoxy silane and hafnium tetra tertiary butoxide.

8. (Original) A method of manufacturing a semiconductor device, according to claim 6, wherein the amide compound is made of at least one of tetraxy diethyl amide hafnium and tetraxy dimethyl amide silicon.

9. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein the film containing metal elements and silicon elements is formed by using an alkoxide and an amide compound as a precursor.

10. (Original) A method of manufacturing a semiconductor device, according to claim 9, wherein the alkoxide is at least one of tetra ethoxy silane and hafnium tetra tertiary butoxide.

11. (Original) A method of manufacturing a semiconductor device, according to claim 9, wherein the amide compound is made of at least one of tetraxy diethyl amide hafnium and tetraxy dimethyl amide silicon.

12. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein the atmosphere containing an oxidant is an atmosphere of a partial pressure of an oxidant is 0.1 Torr or less.

13. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein the atmosphere containing an oxidant is one of an oxidation atmosphere containing an active oxidation species, a low temperature plasma oxidation atmosphere, a low pressure O₂ oxidation atmosphere, a low pressure H₂O oxidation atmosphere, and a low pressure N₂O oxidation atmosphere.

14. (Original) A method of manufacturing a semiconductor device, according to claim 13, wherein a low pressure O₂ oxidation atmosphere, a low pressure H₂O oxidation atmosphere, and a low pressure N₂O oxidation atmosphere is a reduced atmosphere at a temperature of 800°C or less.

15. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein nitriding the film containing metal elements and silicon elements is carried out by using a nitrogen radical or nitrogen plasma.

16. (Original) A method of manufacturing a semiconductor device, according to claim 1, wherein nitriding the film containing metal elements and silicon elements is carried out by using an NH₃ nitridation method.

17. (Original) A method of manufacturing a semiconductor device, comprising:

forming a film containing metal elements and silicon elements on a semiconductor substrate;

exposing the semiconductor substrate to an atmosphere containing an oxidant to form a silicon dioxide film at the interface between the semiconductor substrate and the film containing metal elements and silicon elements;

nitriding the film containing metal elements and silicon elements to form a gate insulating film comprising the silicon dioxide film and a nitrided film containing metal elements and silicon elements;

forming a gate electrode on the gate insulating film; and

forming source/drain regions in the surface region of the semiconductor substrate to sandwich a region covered by the gate electrode.